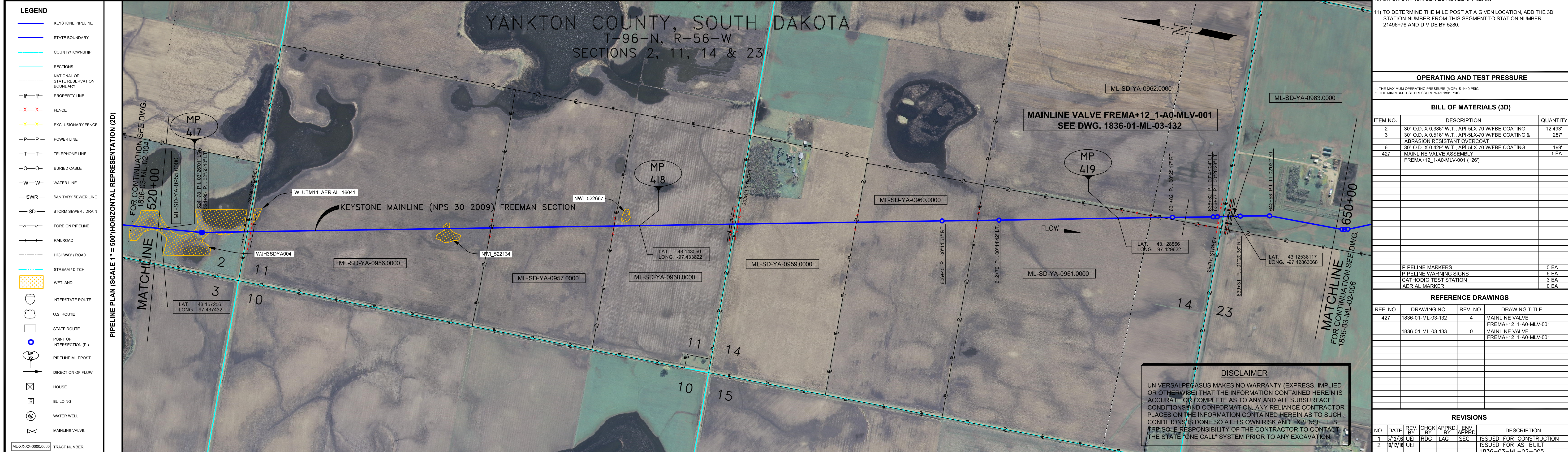


- GENERAL NOTES**
- 1) ALL CHAINAGES ARE IN FEET UNLESS OTHERWISE SPECIFIED.
 - 2) DATUM ELEVATION AND PROJECTION ARE BASED ON MEAN SEA LEVEL AND NAD 83.
 - 3) FIELD PIPE LOCATING REQUIRED TO DETERMINE PLACEMENT OF PIPELINE WITHIN PERMANENT EASEMENT.
 - 4) UNLESS OTHERWISE NOTED, 48 INCHES MINIMUM COVER EXCEPT 36 INCHES IN AREAS OF CONSOLIDATED ROCK.
 - 5) NO ACTUAL AS-BUILT GROUND SHOTS WERE TAKEN AT THIS LOCATION. THE PROFILE REPRESENTS A PROJECTION FROM SHOTS TAKEN AT 150' TO 250' INTERVALS.
 - 6) TWO TYPES OF COATING WERE APPLIED TO THE FIELD WELDS DURING THE ORIGINAL CONSTRUCTION. ONE TYPE WAS TWO COMPONENT LIQUID EPOXY. THE PRODUCTS USED WERE DENSOL 7200 OR SPC SP-2888. THE OTHER TYPE THAT WAS APPLIED TO THE FIELD WELDS WAS FBE. THE PRODUCT NAME WAS 3M 6223 11G.
 - 7) THE SUBSTANTIAL CONSTRUCTION COMPLETION DATE, BASED ON CALIPER PIG RUN, WAS AUGUST 17, 2009 FOR M.P. 403.90 TO 422.96 AND OCTOBER 28, 2009 FOR M.P. 422.96 TO 463.18.
 - 8) ORIGINAL IN-SERVICE DATE OF THE KEYSTONE PIPELINE (PHASE 1): JUNE 30, 2010.
 - 9) CPS CALCULATION DATE: MAY 2010.
 - 10) ORION STATION SERIES NUMBER: 1182700.
 - 11) TO DETERMINE THE MILE POST AT A GIVEN LOCATION, ADD THE 3D STATION NUMBER FROM THIS SECTION TO STATION NUMBER 21496+76 AND DIVIDE BY 5280.



OPERATING AND TEST PRESSURE

1. THE MAXIMUM OPERATING PRESSURE (MOP) IS 1440 PSIG.
2. THE MINIMUM TEST PRESSURE WAS 900 PSIG.

BILL OF MATERIALS (3D)

ITEM NO.	DESCRIPTION	QUANTITY
2	30" O.D. X 0.388" W.T., API-5LX-70 W/FBE COATING	12,493'
3	30" O.D. X 0.516" W.T., API-5LX-70 W/FBE COATING & ABRASION RESISTANT OVERCOAT	287'
6	30" O.D. X 0.425" W.T., API-5LX-70 W/FBE COATING	199'
427	MAINLINE VALVE ASSEMBLY FREMA+12_1-A0-MLV-001 (+26')	1 EA

ITEM	QUANTITY
PIPELINE MARKERS	0 EA
PIPELINE WARNING SIGNS	6 EA
CATHODIC TEST STATION	3 EA
AERIAL MARKER	0 EA

REFERENCE DRAWINGS

REF. NO.	DRAWING NO.	REV. NO.	DRAWING TITLE
427	1836-01-ML-03-132	4	MAINLINE VALVE FREMA+12_1-A0-MLV-001
	1836-01-ML-03-133	0	MAINLINE VALVE FREMA+12_1-A0-MLV-001

REVISIONS

NO.	DATE	REV. BY	CHKD. BY	APPRD. BY	DESCRIPTION
1	5/17/09	UEI	RDG	LAG	ISSUED FOR CONSTRUCTION
2	10/17/09	UEI	RDG	LAG	ISSUED FOR AS-BUILT
					REPLACES COVERAGE OF IFC DRAWINGS 1836-03-ML-02-007, 1836-03-ML-02-008, 1836-03-ML-02-009

ENGINEERING RECORDS

DRAWN BY	INITIAL	DATE	ENY. APPRD.	INITIAL	DATE
UEI		10/03/01			

PROFESSIONAL ENGINEER

NAME	STATE	LIC#	REV#	DATE
LOYS ALVIN GRAY, III	SD	CE9004		

SCALE: 0 125 250 500 Feet



KEYSTONE MAINLINE (NPS 30 2009) FREEMAN SECTION
SPREAD 4B DISCIPLINE 03

AS-BUILT ALIGNMENT

M.P. 416.99 TO M.P. 419.46
SHEET 5 OF 13 SHEETS
STA. 520+53 TO STA. 650+58 (3D)
DRAWING NO. 1836-03-ML-02-005 REV. 2

PIPELINE SCHEMATIC	HORIZONTAL STATIONS (2D)	STATION DESCRIPTION	SLOPE STATIONS (3D)	PIPELINE DATA
HEAVY WALL PIPE	520+00	MATCHLINE 520+00	520+00	
WELD FITTING	524+31	524+31 P.I. 0322901 LT.	524+31	
CASING PIPE	524+45	524+45 P.I. 0255107 LT.	524+45	
CONCRETE COATING	529+73	529+73 OVERHEAD POWERLINE HT. = 25' 5.0' CLR. (ABOVE)	529+73	
SET ON WEIR	530+19	530+19 OVERHEAD POWERLINE HT. = 25' 5.0' CLR. (ABOVE)	530+19	
PIPELINE WARNING SIGN	530+42	530+42 OVERHEAD POWERLINE HT. = 25' 5.0' CLR. (ABOVE)	530+42	
PIPELINE MARKER	530+42	530+42 OVERHEAD POWERLINE HT. = 25' 5.0' CLR. (ABOVE)	530+42	
MATERIAL ITEM	530+42	530+42 OVERHEAD POWERLINE HT. = 25' 5.0' CLR. (ABOVE)	530+42	
GROUNDING MAT	530+42	530+42 OVERHEAD POWERLINE HT. = 25' 5.0' CLR. (ABOVE)	530+42	
ZINC RIBBON	530+42	530+42 OVERHEAD POWERLINE HT. = 25' 5.0' CLR. (ABOVE)	530+42	
AERIAL MARKER	530+42	530+42 OVERHEAD POWERLINE HT. = 25' 5.0' CLR. (ABOVE)	530+42	
CATHODIC TEST STATION	530+42	530+42 OVERHEAD POWERLINE HT. = 25' 5.0' CLR. (ABOVE)	530+42	
MAINLINE VALVE	530+42	530+42 OVERHEAD POWERLINE HT. = 25' 5.0' CLR. (ABOVE)	530+42	
CHECK VALVE	530+42	530+42 OVERHEAD POWERLINE HT. = 25' 5.0' CLR. (ABOVE)	530+42	
OPEN CUT	530+42	530+42 OVERHEAD POWERLINE HT. = 25' 5.0' CLR. (ABOVE)	530+42	
BORE	530+42	530+42 OVERHEAD POWERLINE HT. = 25' 5.0' CLR. (ABOVE)	530+42	
DRINKING WATER USA	530+42	530+42 OVERHEAD POWERLINE HT. = 25' 5.0' CLR. (ABOVE)	530+42	
ECOLOGICAL USA	530+42	530+42 OVERHEAD POWERLINE HT. = 25' 5.0' CLR. (ABOVE)	530+42	
HIGHLY POPULATED AREA	530+42	530+42 OVERHEAD POWERLINE HT. = 25' 5.0' CLR. (ABOVE)	530+42	
OPERATOR (KEYSTONE) DEFINED	530+42	530+42 OVERHEAD POWERLINE HT. = 25' 5.0' CLR. (ABOVE)	530+42	
OTHER POPULATED AREA	530+42	530+42 OVERHEAD POWERLINE HT. = 25' 5.0' CLR. (ABOVE)	530+42	
SOURCE WATER PROTECTION AREA	530+42	530+42 OVERHEAD POWERLINE HT. = 25' 5.0' CLR. (ABOVE)	530+42	
WELLHEAD PROTECTION AREA	530+42	530+42 OVERHEAD POWERLINE HT. = 25' 5.0' CLR. (ABOVE)	530+42	
TEST SECTIONS (3D)	520+00	520+00	520+00	
TOPSOIL SALVAGE METHOD	520+00	520+00	520+00	
STREAMS	520+00	520+00	520+00	
WETLANDS	520+00	520+00	520+00	
TIMING CONSTRAINTS	520+00	520+00	520+00	
STATIONS	520+00	520+00	520+00	
MONITORING	520+00	520+00	520+00	
RECLAMATION	520+00	520+00	520+00	
SPECIAL CONSIDERATIONS	520+00	520+00	520+00	

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TEST SECTION 4B-1
ILTO-028-2010